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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 09/990,604  | 11/21/2001  | John T. Brady        | 57029US002          | 3886             |
| 32692   | 7590        | 12/10/2004           | EXAMINER            |                  |
| 3M INNOVATIVE PROPERTIES COMPANY<br>PO BOX 33427<br>ST. PAUL, MN 55133-3427 |             |                      | METZMAIER, DANIEL S |                  |
|   |             |                      | ART UNIT            | PAPER NUMBER     |
|   |             |                      | 1712                |                  |

DATE MAILED: 12/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                 |                  |
|------------------------------|---------------------------------|------------------|
| <b>Office Action Summary</b> | Application No.                 | Applicant(s)     |
|                              | 09/990,604                      | BRADY ET AL.     |
|                              | Examiner<br>Daniel S. Metzmaier | Art Unit<br>1712 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 13 August 2004.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-3,8-15 and 17-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) 1-3,8-15 and 17-24 is/are allowed.
- 6) Claim(s) \_\_\_\_\_ is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    - a) All    b) Some \* c) None of:
      1. Certified copies of the priority documents have been received.
      2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
      3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 8/13/2004.
  - 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date \_\_\_\_\_.
  - 5) Notice of Informal Patent Application (PTO-152)
  - 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

Claims 1-3, 8-15 and 17-24 are allowed.

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after allowance or after an Office action under *Ex Parte Quayle*, 25 USPQ 74, 453 O.G. 213 (Comm'r Pat. 1935). Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on 13 August 2004 has been entered.

### ***Ex parte Quayle issues***

2. This application is in condition for allowance except for the following formal matters as follows.

### ***Specification***

3. The disclosure is objected to because of the following informalities: the paragraph at page 4, lines 2-5, defines the weight ratio of titanium to antimony, i.e., Ti/Sb. Table 1, column 3, on page 19 list the weight ratio of Sb/Ti. The numeric ranges on page 4 appear to correspond to the numeric values set forth in Table 1 but the ratios are inverted.

The amendment to the claims filed on December 8, 2003 sets forth the basis for the limitation of the weight ratio in claims 1 and 15 as page 19, Table 1, Examples 4-11. Since the description on page 4 and the data in Table 1 is inconsistent, applicants

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should check said ratio for correctness and/or explain the apparent inconsistency. Any explanation should further include reference to the arguments made at page 12 of the December 8, 2003 filing.

Appropriate correction is required.

***Allowable Subject Matter***

4. Claims 1-3, 8-15 and 17-24 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter: the newly cited prior art does not disclose or fairly suggest the claimed aqueous colloidal dispersions and methods of making said colloidal dispersions having a specified Ti/Sb ratio and having the average rutile-like crystalline phase content as claimed.

Stamel, 5,759,256, lacks a specific teaching of the Ti/Sb weight range claimed. Stamel teaches away from said range since the exemplified mixed oxides employ a weight ratio of antimony to titanium claimed of about 0.22.

Monden et al, US 6,328,947, discloses methods of making nanoparticles employing organic solvent systems and metal halides. Moden et al employs a different method of making. Monden et al lacks the combination of antimony oxide and titanium oxide have a specified antimony to titanium weight ratio claimed.

Barnes et al, US 2002/0073895, lacks the claimed aqueous colloidal dispersions, methods of making said colloidal dispersions, the combination of antimony oxide with titanium oxide have the specified antimony to titanium weight ratio claimed.

Vasilescu et al is directed to bulk, films fibers and membranes. Vasilescu et al lacks the claimed aqueous colloidal dispersions and methods of making said colloidal dispersions.

It is suggested that applicants insert the definition at page 3 into the independent claims to make them read more clearly. Regarding the term "rutile-like" attention is directed to page 10 of the response filed December 8, 2003 and page 3, lines 16-17, of the instant specification.

***Conclusion***

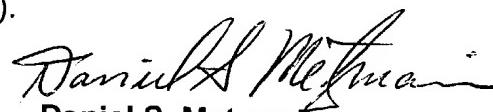
6. Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
**Daniel S. Metzmaier**  
**Primary Examiner**  
**Art Unit 1712**

DSM